What is claimed:

1. An emission treatment system for treatment of an exhaust stream comprising NOx and particulate matter, the emission treatment system comprising:

a) an oxidation catalyst;

b) an injector in fluid communication with and downstream of the oxidation catalyst, wherein the injector periodically meters ammonia or an ammonia precursor into the exhaust stream; and,

c) a wall flow monolith in fluid communication with and downstream of the injector, wherein the wall flow monolith has a plurality of longitudinally extending passages formed by longitudinally extending walls bounding and defining said passages, wherein the passages comprise inlet passages having an open inlet end and a closed outlet end, and outlet passages having a closed inlet end and an open outlet end,

wherein the wall flow monolith comprises an SCR catalyst composition that permeates the walls at a concentration of at least 1.3 g/in^3; wherein the wall flow monolith has a wall porosity of at least 50% with an average pore size of at least 5 microns.

2. The emission treatment system of claim 1, wherein the SCR catalyst composition that permeates the walls of the wall flow monolith so that the walls have a wall porosity of from 50 to 75% with an average pore size of from 5 to 30 microns.

3. The emission treatment system of claim 1, wherein the SCR catalyst composition comprises a zeolite and base metal component selected from one or more of a copper and iron component.

4. The emission treatment system of claim 3, wherein the base metal component is a copper component.

5. The emission treatment system of claim 4, wherein the zeolite of the SCR catalyst composition has a silica to alumina ratio of at least about 10.

6. The emission treatment system of claim 5, wherein the zeolite of the SCR catalyst composition is a beta zeolite.

7. The emission treatment system of claim 1, wherein there is from 1.6 to 2.4 g/in^3 of SCR catalyst composition disposed on the wall flow monolith.

8. The emission treatment system of claim 1, wherein the oxidation catalyst comprises a platinum group metal component.

9. The emission treatment system of claim 8, wherein the oxidation catalyst further comprises a zeolite component.

10. The emission treatment system of claim 1, further comprising a diesel engine upstream of, and in fluid communication with the oxidation catalyst.

11. The emission treatment system of claim 1, wherein the oxidation catalyst is disposed on a honeycomb flow through monolith substrate or an open cell foam substrate.

12. A method for treating emissions produced in an exhaust stream comprising NOx and particulate matter, the method comprising:

(a) passing the exhaust stream through an oxidation catalyst wherein a substantial portion of NO is oxidized to NO_2 to provide an NO_2-enriched exhaust stream;

(b) metering at periodic intervals, ammonia or an ammonia precursor into the NO_2-enriched exhaust stream; and,

(c) subsequently passing the exhaust stream through a wall flow monolith wherein particulate matter is filtered and a substantial portion of NOx is reduced to N_2;

wherein the wall flow monolith has a plurality of longitudinally extending passages formed by longitudinally extending walls bounding and defining said passages, wherein the passages comprise inlet passages having an open inlet end and a closed outlet end, and outlet passages having a closed inlet end and an open outlet end,

wherein the wall flow monolith comprises an SCR catalyst composition that permeates the walls at a concentration of at least 1.3 g/in^3; wherein the wall flow

monolith has a wall porosity of at least 50% with an average pore size of at least 5 microns.

13. The method of claim 12, wherein the SCR catalyst composition comprises a zeolite and base metal component selected from one or more of a copper and iron component.

14. The method of claim 13, wherein the base metal component is a copper component.

15. The method of claim 14, wherein the zeolite of the SCR catalyst composition has a silica to alumina ratio of at least about 10.

16. The method of claim 15, wherein the zeolite of the SCR catalyst composition is a beta zeolite.

17. The method of claim 12, wherein there is from 1.6 to 2.4 g/in^3 of SCR catalyst composition disposed on the wall flow monolith.

18. The method of claim 12, wherein the oxidation catalyst comprises a platinum group metal component.

19. The method of claim 18, wherein the oxidation catalyst further comprises a zeolite component.

20. The method of claim 12, further comprising a diesel engine upstream of, and in fluid communication with the oxidation catalyst.

21. The method of claim 12, wherein the oxidation catalyst is disposed on a honeycomb flow through monolith substrate or an open cell foam substrate.

22. A method for disposing an SCR catalyst composition on a wall flow monolith, wherein the wall flow monolith has a plurality of longitudinally extending passages

formed by longitudinally extending walls bounding and defining said passages, wherein the passages comprise inlet passages having an open inlet end and a closed outlet end, and outlet passages having a closed inlet end and an open outlet end, the method comprising:

(a) immersing the wall flow monolith in an aqueous slurry comprising the SCR catalyst composition from a first direction to deposit the SCR catalyst composition on the inlet passages;

(b) removing excess slurry from the inlet passages by forcing a compressed gas stream through the outlet passages and applying a vacuum to the inlet passages;

(c) immersing the wall flow monolith in the aqueous slurry from a second direction, opposite the first direction, to deposit the SCR catalyst composition on the outlet passages;

(d) removing excess slurry from the outlet passages by forcing a compressed gas stream through the inlet passages and applying a vacuum to the outlet passages; and

(e) drying and calcining the coated wall flow monolith.

23. The method of claim 22, wherein the SCR catalyst composition permeates the walls at a concentration of at least 1.3 g/in^3.

24. The method of claim 22, wherein the wall flow monolith has a porosity of at least 50% and a mean pore size of at least 5 microns.